

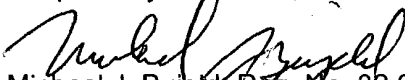
REMARKS

The specification is amended, per the above, to overcome some informalities noted therein as well as to add a new paragraph 30. If any further amendment to the specification is believed necessary, the Examiner is invited to contact the undersigned representative of the Applicant to discuss the same.

Please consider new claims 11-21 upon consideration of this application.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,



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[002] FIELD OF THE INVENTION ♦♦

[003] The present invention concerns a method for machine diagnosis and, in particular, for diagnosis of a machine or transmission of a motor vehicle according to the preamble of Claim 1. In addition, the invention concerns a device for implementing the method. ♦♦

[004] BACKGROUND OF THE INVENTION ♦♦

[011] ~~— This objective is achieved by the characteristics defined in the independent Claim 1. Other advantageous features are indicated in the dependent claims.~~ ♦♦

[012] SUMMARY OF THE INVENTION ♦♦

[024] BRIEF DESCRIPTION OF THE DRAWING ♦♦

[025] ~~Further advantages emerge from the example embodiment illustrated in the figure.~~ The invention will now be described, by way of example, with reference to the accompanying drawings in which: ♦♦

[026] ~~— The figure~~ ♦♦

[026] Fig. 1 is a schematic representation of the structure and functional mode of the measurement system according to the invention. ♦♦

[027] DETAILED DESCRIPTION OF THE INVENTION ♦♦

[030] As shown in Fig. 1, the electronic unit 8 is connected, in a conventional manner, to a display 12, a computer screen, an indicator, a warning light, etc., to indicate to the operator of the machine or the transmission that servicing of the machine or transmission is desired or necessary. ♦♦

11. (NEW) A method of diagnosing a machine by detecting ferritic wear particles (3) which are deposited within oil flowing within the machine, the method comprising the step of:

detecting accumulation of the ferritic wear particles (3) deposited within the oil, flowing through the machine, by a measurement system having a coil (2); and
generating an output signal from the measurement system which is indicative of a condition of the machine.

12. (NEW) The method according to claim 11, further comprising the step of locating the coil (2) in a lower region of an oil duct (9) of the machine and influencing an inductance of the coil (2) by an element situated opposite the coil (2).

13. (NEW) The method according to claim 12, further comprising the step of the situating a toothed wheel (6) opposite the coil (2).

14. (NEW) The method according to claim 11, further comprising the step of producing a magnetic flux density in the coil (2), which extends outwards over a cross-section of an oil duct (9) of the machine, so that the coil (2) acts as a capturing magnet and causes the ferritic wear particles (3), to be detected, to accumulate on the coil (2).

15. (NEW) The method according to claim 11, further comprising the step of allowing accumulation of the ferritic wear particles (3) on a surface of the coil (2) and change an inductance of the coil (2), and detecting and evaluating the change in the inductance and the output signal of the measurement system with an electronic unit (8).

16. (NEW) The method according to claim 11, further comprising the step of adjusting an effectiveness and a sensitivity of the measurement system by controlling at least one of:

- an amount of an electric current flowing through the coil (2);
- a choice of material from which the coil (2) is manufactured; and
- a number of turns for the coil (2),

in order to adapt the measurement system for a different environment.

17. (NEW) The method according to claim 11, further comprising the steps of locating an element opposite to the coil (2), and determining, with the measurement system, a rotation speed of the element located opposite the coil (2).

18. (NEW) A device for diagnosis of a machine by analyzing oil flowing within the machine to detect ferritic wear particles located therein, wherein the device for diagnosis comprises:

a coil core (11) which is located in a lower region of an oil duct (9) with a coil (2) wound around the coil core (11); and

a device for providing a measurement condition of the machine being coupled to the coil (2) for receiving an inductance signal therefrom influenced by accumulation of ferritic wear particles (3) adjacent the coil (2), whereby, during operation of the device for diagnosis of the transmission, the ferritic wear particles (3) to be detected accumulate on a surface of the coil (2) and influence the inductance of the coil (2), and hence the output signal therefrom, which is detected by the device for providing the measurement condition of the machine; and

the device for providing the measurement condition of the machine being coupled to an indicator for indicating required servicing of the machine.

19. (NEW) The device according to claim 18, wherein an element is arranged opposite to the coil (2) such that a voltage signal of the coil (2) is pulsed according to a rotation speed of the element arranged opposite to the coil (2).

20. (NEW) The device according to claim 18, wherein the measurement system comprises an electronic unit (8) which detects an output signal from the coil (2) having at least two data,

a first datum varying in a pulsed way with constant amplitude, and

a second datum in the form of a deviation from the amplitude,

and a deviation of the amplitude is attributable to accumulation of the ferritic wear particles (3) and a rotation speed of the element arranged opposite the coil (2) can be calculated from the pulsed variation.

21. (NEW) A method of diagnosing a transmission by detecting ferritic wear particles (3) which are deposited within oil flowing within the transmission, the method comprising the step of:

detecting accumulation of the ferritic wear particles (3) deposited within the oil flowing through the transmission by using a measurement system having a coil (2);

generating an output signal from the measurement system which is indicative of a condition of the transmission; and

sending the output signal of an indicator to indicate that servicing of the machine is required.